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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,769	10/29/2003	Hsu-Cheng Chiang	LOU 113	5295

7590 01/11/2005

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EXAMINER	
DOERRLER, WILLIAM CHARLES	
ART UNIT	PAPER NUMBER

3744

DATE MAILED: 01/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

SP

Office Action Summary	Application No. 10/694,769	Applicant(s) CHIANG ET AL.	
	Examiner William C Doerfler	Art Unit 3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,2,4-15,17,18 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Dean.

Dean shows a magnetic refrigerator with a magneto-caloric material 52 connected to heat pipes 50,60. In regard to claim 11, see lines 33-42 of column 3. In regard to claim 13, see the first line of column 6. In regard to claim 14, see lines 7-19 of column 6.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 3 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dean in view of either Nakagome et al or Barclay et al '135.

Dean discloses applicants' basic inventive concept, a magnetocaloric cooling system with integral heat pipes to transfer heat to and from the system, substantially as claimed with the exception of partitioning the magnetocaloric material. Nakagome et al (I1,I2 and I3) and Barclay et al (30), show this feature to be old in the magnetic cooling system art. It would have been obvious to one of ordinary skill in the art at the time of applicants' invention from the teaching of either Nakagome et al or Barclay et al '135 to modify the magnetic cooling system of Dean by partitioning the magneto-caloric material to keep the material in place during use to ensure proper functioning. In regard to claim 3, attaching heat pipes to an external surface is seen as a matter of obvious design choice where the references clearly teach integral heat pipes. It would have been obvious to one of ordinary skill in the art that the heat pipes can be attached to an external surface to prevent the mixing of the heat pipe refrigerant with the magneto-caloric material.

Claims 3 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dean in view of Barclay et al '994.

Dean discloses applicants' basic inventive concept, a magnetocaloric cooling system with integral heat pipes to transfer heat to and from the system, substantially as claimed with the exception of moving the magnetic refrigerant in relation to the magnet. Barclay et al, show this feature to be old in the magnetic cooling system art see line 45 of column 8. It would have been obvious to one of ordinary skill in the art at the time of applicants' invention from the teaching of Barclay et al '994 to modify the magnetic cooling system of Dean by moving the magnet to improve fluid seal by making the fluid passing parts stationary. In regard to claim 3, attaching heat pipes to an external surface is seen as a matter of obvious design choice where the references clearly teach integral heat pipes. It would have been obvious to one of ordinary skill in the art that the heat pipes can be attached to an external surface to prevent the mixing of the heat pipe refrigerant with the magneto-caloric material.


Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Arman and Bonaquist show magnetic cooling systems with heat pipes to transfer heat.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C Doerrler whose telephone number is (571) 272-4807. The examiner can normally be reached on Monday-Friday 6:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Denise Esquivel can be reached on (571) 272-4808. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


William C Doerrler
Primary Examiner
Art Unit 3744

WCD